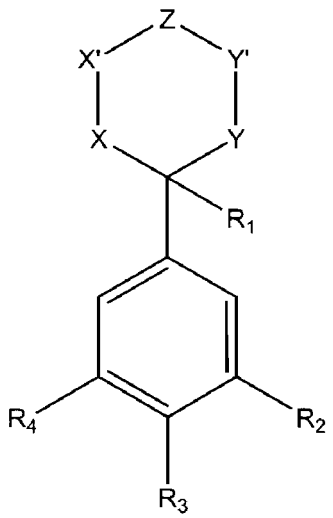
Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1. (Currently Amended) A compound of formula (I), or a pharmaceutically acceptable salt or prodrug thereof



(I)

wherein X and X' ~~are independently selected from~~ taken together form ~~-C(R_5)$_2$-, -O-, -S-, -N(R_5)-, or taken together form -C(R_5)=C(R_5)-~~, -C(R_5)=N-, ~~-N=C(R_5)-, -N(R_5)N(R_5)- or -N=N-~~;

Y ~~and Y' are independently selected from -C(R_5)$_2$-, -O-, -S-, -N(R_5)-, or taken together form -C(R_5)=C(R_5)-, -C(R_5)=N-, -N=C(R_5)-, -N(R_5)N(R_5)- or -N=N-~~ is -C(R_5)- and taken together with the carbon atom bearing the phenyl group forms a double bond;

Y' is -N(R_5)-;

Z ~~is $C(R_5)_2$, O, S or $N(R_5)$, or~~ forms a covalent single ~~or double~~ bond between X' and Y'~~, or Z together with X' or Y' forms $C(R_5)=C(R_5)$, $C(R_5)=N$, $N=C(R_5)$, $N(R_5)N(R_5)$ or $N=N$~~;

~~wherein when Z is O, S or $N(R_5)$, X' and Y' are $C(R_5)_2$;~~

~~when X is O, S or $N(R_5)$, X' is $C(R_5)_2$;~~

~~when Y is O, S or $N(R_5)$, Y' is $C(R_5)_2$; or~~

~~X or Y together with the carbon atom bearing the phenyl group form a double bond wherein which ever of X or Y forms part of the double bond is selected from C(R_5) and N;~~

R_1 is selected from hydrogen, C_{1-20}alkyl, C_{2-20}alkenyl, C_{2-20}alkynyl, $(A)_nC(O)R_6$, $(A)_nC(S)R_6$, $(A)_nS(O)R_6$, $(A)_nS(O)_2R_6$, $(A)_nOR_7$, $(A)_nSR_7$, $(A)_nN(R_8)$, $(A)_nC(=NR_9)R_{10}$ and $(A)_nR_{11}$, or when X or Y together with the carbon atom bearing the phenyl group form a double bond, R_1 is absent;

R_2 and R_4 are independently selected from hydrogen, C_{1-3}alkyl and $(A)_mR_{12}$;

R_3 is selected from C_{1-3}alkyl, $(A)_mR_{12}$, $(A)_m$aryl and $(A)_m$heterocyclyl;

R_5 is selected from hydrogen, C_{1-20}alkyl, C_{2-20}alkenyl, C_{2-20}alkynyl, $(A)_nC(O)R_6$, $(A)_nC(S)R_6$, $(A)_nS(O)R_6$, $(A)_nS(O)_2R_6$, $(A)_nOR_7$, $(A)_nSR_7$, $(A)_pN(R_8)$, $(A)_nC(=NR_9)R_{10}$ and $(A)_nR_{11}$;

R_6 is selected from hydrogen, C_{1-20}alkyl, C_{2-20}alkenyl, C_{2-20}alkynyl, OH, OC_{1-10}alkyl, OC_{2-10}alkenyl, OC_{2-10}alkynyl, $O(A)_qR_{11}$, SH, SC_{1-10}alkyl, SC_{2-10}alkenyl, SC_{2-10}alkynyl, $S(A)_qR_{11}$, $N(R_{13})_2$, $[NH\text{-}CH(R_{14})C(O)]_s\text{-}OH$, $[NH\text{-}CH(R_{14})C(O)]_s\text{-}OC_{1-3}$alkyl, $[sugar]_s$ and $(A)_qR_{11}$;

R_7 is selected from hydrogen, C_{1-20}alkyl, C_{2-20}alkenyl, C_{2-20}alkynyl, $(A)_qR_{11}$, C(O)H, $C(O)C_{1-10}$alkyl, $C(O)C_{2-10}$alkenyl, $C(O)C_{2-10}$alkynyl, C(O)-aryl, $C(O)(A)_qR_{11}$, $C(O)_2H$, $C(O)_2C_{1-10}$alkyl, $C(O)_2C_{2-10}$alkenyl, $C(O)_2C_{2-10}$alkynyl, $C(O)_2$-aryl, $C(O)_2(A)_qR_{11}$, C(S)H, $C(S)C_{1-10}$alkyl, $C(S)C_{2-10}$alkenyl, $C(S)C_{2-10}$alkynyl, C(S)-aryl, $C(S)(A)_qR_{11}$, C(S)OH,

$C(S)OC_{1-10}$alkyl, $C(S)OC_{2-10}$alkenyl, $C(S)OC_{2-10}$alkynyl, C(S)O-aryl, $C(S)O(A)_qR_{11}$, $S(O)_tH$, $S(O)_tC_{1-10}$alkyl, $S(O)_tC_{2-10}$alkenyl, $S(O)_tC_{2-10}$alkynyl, $S(O)_t$-aryl, $S(O)_t(A)_qR_{11}$, $[C(O)CH(R_{14})NH]_s$-H, $[C(O)CH(R_{14})NH]_s$-C_{1-10}alkyl, $[C(O)CH(R_{14})NH]_s$-C_{2-10}alkenyl, $[C(O)CH(R_{14})NH]_s$-C_{2-10}alkynyl, $[C(O)CH(R_{14})NH]_s$-aryl, $[C(O)CH(R_{14})NH]_s$-$(A)_qR_{11}$ and $[sugar]_s$;

each R_8 is independently selected from R_7 and $NHC(=NR_{15})NH_2$;

R_9 is selected from hydrogen and C_{1-6}alkyl;

R_{10} is selected from C_{1-6}alkyl, NH_2, $NH(C_{1-3}alkyl)$, $N(C_{1-3}alkyl)_2$, OH, OC_{1-3}alkyl, SH and SC_{1-3}alkyl;

R_{11} is selected from OH, OC_{1-6}alkyl, OC_{1-3}alkyl-O-C_{1-3}alkyl, O-aryl, O-heterocyclyl, $O[C(O)CH(R_{14})NH]_sH$, $[sugar]_s$, SH, SC_{1-6}alkyl, SC_{1-3}alkyl-O-C_{1-3}alkyl, S-aryl, S-heterocyclyl, $S[C(O)CH(R_{14})NH]_sH$, halo, $N(R_{15})_2$, $C(O)R_{16}$, CN, $C(R_{17})_3$, aryl and heterocyclyl;

R_{12} is selected from OH, SH, NH_2, halo, NO_2, $C(R_{17})_3$, $OC(R_{17})_3$ and CN;

each R_{13} is independently selected from hydrogen, C_{1-6}alkyl, C_{2-6}alkenyl, C_{2-6}alkynyl and $(A)_qR_{11}$;

R_{14} is the characterising group of an amino acid;

each R_{15} is independently selected from hydrogen, C_{1-6}alkyl, C_{1-3}alkoxyC_{1-3}alkyl, aryl and heterocyclyl;

R_{16} is selected from C_{1-3}alkyl, OH, C_{1-3}alkoxy, aryl, aryloxy, heterocyclyl and heterocyclyloxy;

each R_{17} is independently selected from hydrogen and halogen;

A is optionally substituted methylene wherein when $n > 1$, any two adjacent A groups are optionally interrupted by –O-, -S- or $-N(R_{15})-$;

where n is 0 or an integer selected from 1 to 20;

m is 0 or an integer selected from 1 to 3;

p is an integer selected from 1 to 20;

q is an integer selected from 1 to 10

s is an integer selected from 1 to 5;

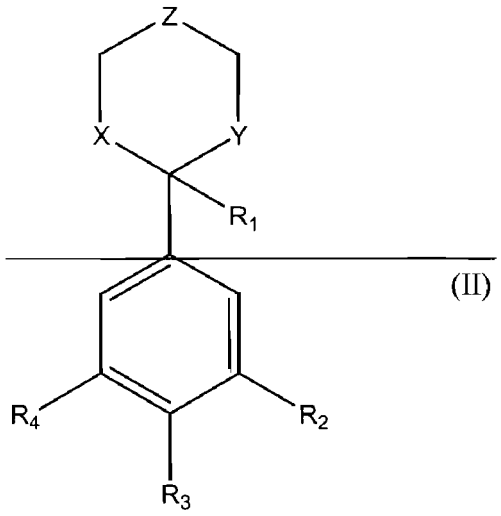
t is an integer selected from 1 or 2; and

wherein each alkyl, alkenyl , alkynyl, aryl and heterocyclyl may be optionally substituted.

2. (Currently Amended) A compound according to claim 1 ~~of formula (II),~~ wherein

Y is -CH-; and

X is -CH-; or a pharmaceutically acceptable salt or prodrug thereof



(II)

~~wherein X and Y are independently selected from $-O-$, $-S-$, $-N(R_5)-$ and $-C(R_5)_2-$;~~

~~Z is $-C(R_5)_2-$ or is a covalent bond between adjacent methylene groups;~~

~~R_1 is selected from hydrogen, C_{1-20}alkyl, C_{2-20}alkenyl, C_{2-20}alkynyl, $(A)_nC(O)R_6$, $(A)_nC(S)R_6$, $(A)_nS(O)R_6$, $(A)_nS(O)_2R_6$, $(A)_nOR_7$, $(A)_nSR_7$, $(A)_nN(R_8)$, $(A)_nC(=NR_9)R_{10}$ and $(A)_nR_{11}$;~~

R_2 and R_4 are independently selected from hydrogen, C_{1-3}alkyl and $(A)_mR_{12}$;

R_3 is selected from C_{1-3}alkyl, $(A)_mR_{12}$, $(A)_m$aryl and $(A)_m$heterocyclyl;

R_5 is selected from hydrogen, C_{1-20}alkyl, C_{2-20}alkenyl, C_{2-20}alkynyl, $(A)_nC(O)R_6$, $(A)_nC(S)R_6$, $(A)_nS(O)R_6$, $(A)_nS(O)_2R_6$, $(A)_nOR_7$, $(A)_nSR_7$, $(A)_pN(R_8)$, $(A)_nC(=NR_9)R_{10}$ and $(A)_nR_{11}$;

R_6 is selected from hydrogen, C_{1-20}alkyl, C_{2-20}alkenyl, C_{2-20}alkynyl, OH, OC_{1-10}alkyl, OC_{2-10}alkenyl, OC_{2-10}alkynyl, $O(A)_qR_{11}$, SH, SC_{1-10}alkyl, SC_{2-10}alkenyl, SC_{2-10}alkynyl, $S(A)_qR_{11}$, $N(R_{13})_2$, $[NH\text{-}CH(R_{14})C(O)]_s$-OH, $[NH\text{-}CH(R_{14})C(O)]_s$-$OC_{1-3}$alkyl, $[sugar]_s$ and $(A)_qR_{11}$;

R_7 is selected from hydrogen, C_{1-20}alkyl, C_{2-20}alkenyl, C_{2-20}alkynyl, $(A)_qR_{11}$, C(O)H, $C(O)C_{1-10}$alkyl, $C(O)C_{2-10}$alkenyl, $C(O)C_{2-10}$alkynyl, C(O)-aryl, $C(O)(A)_qR_{11}$, $C(O)_2H$, $C(O)_2C_{1-10}$alkyl, $C(O)_2C_{2-10}$alkenyl, $C(O)_2C_{2-10}$alkynyl, $C(O)_2$-aryl, $C(O)_2(A)_qR_{11}$, C(S)H, $C(S)C_{1-10}$alkyl, $C(S)C_{2-10}$alkenyl, $C(S)C_{2-10}$alkynyl, C(S)-aryl, $C(S)(A)_qR_{11}$, C(S)OH, $C(S)OC_{1-10}$alkyl, $C(S)OC_{2-10}$alkenyl, $C(S)OC_{2-10}$alkynyl, C(S)O-aryl, $C(S)O(A)_qR_{11}$, $S(O)_tH$, $S(O)_tC_{1-10}$alkyl, $S(O)_tC_{2-10}$alkenyl, $S(O)_tC_{2-10}$alkynyl, $S(O)_t$-aryl, $S(O)_t(A)_qR_{11}$, $[C(O)CH(R_{14})NH]_s$-H, $[C(O)CH(R_{14})NH]_s$-C_{1-10}alkyl, $[C(O)CH(R_{14})NH]_s$-C_{2-10}alkenyl, $[C(O)CH(R_{14})NH]_s$-C_{2-10}alkynyl, $[C(O)CH(R_{14})NH]_s$-aryl, $[C(O)CH(R_{14})NH]_s$-$(A)_qR_{11}$ and $[sugar]_s$;

each R_8 is independently selected from R_7 and $NHC(=NR_{15})NH_2$;

R_9 is selected from hydrogen and C_{1-6}alkyl;

R_{10} is selected from C_{1-6}alkyl, NH_2, $NH(C_{1-3}$alkyl), $N(C_{1-3}$alkyl)$_2$, OH, OC_{1-3}alkyl, SH and SC_{1-3}alkyl;

R_{11} is selected from OH, OC_{1-6}alkyl, OC_{1-3}alkyl-O-C_{1-3}alkyl, O-aryl, O-heterocyclyl, $O[C(O)CH(R_{14})NH]_sH$, $[sugar]_s$, SH, SC_{1-6}alkyl, SC_{1-3}alkyl-O-C_{1-3}alkyl, S-aryl, S-heterocyclyl, $S[C(O)CH(R_{14})NH]_sH$, halo, $N(R_{15})_2$, $C(O)R_{16}$, CN, $C(R_{17})_3$, aryl and heterocyclyl;

~~R_{12} is selected from OH, SH, NH_2, halo, NO_2, $C(R_{17})_3$, $OC(R_{17})_3$ and CN;~~

~~each R_{13} is independently selected from hydrogen, C_{1-6}alkyl, C_{2-6}alkenyl, C_{2-6}alkynyl and $(A)_qR_{11}$;~~

~~R_{14} is the characterising group of an amino acid;~~

~~each R_{15} is independently selected from hydrogen, C_{1-6}alkyl, C_{1-3}alkoxyC_{1-3}alkyl, aryl and heterocyclyl;~~

~~R_{16} is selected from C_{1-3}alkyl, OH, C_{1-3}alkoxy, aryl, aryloxy, heterocyclyl and heterocyclyloxy;~~

~~each R_{17} is independently selected from hydrogen and halogen;~~

~~A is optionally substituted methylene wherein when n > 1, any two adjacent A groups are optionally interrupted by –O–, –S– or –N(R_{15})–;~~

~~where n is 0 or an integer selected from 1 to 20;~~

~~m is 0 or an integer selected from 1 to 3;~~

~~p is an integer selected from 1 to 20;~~

~~q is an integer selected from 1 to 10~~

~~s is an integer selected from 1 to 5;~~

~~t is an integer selected from 1 or 2; and~~

~~wherein each alkyl, alkenyl, alkynyl, aryl and heterocyclyl may be optionally substituted~~.

3. (Currently Amended) A compound according to claim 1 or 2 wherein R_5 is C_{1-20}alkyl

~~X is –O–, –S–, –NH– or –CH_2–;~~

~~Y is –O–, –S– or –NR_5–;~~

~~Z forms a covalent bond between adjacent methylene groups;~~

~~R_1 is selected from C_{1-20}alkyl, C_{1-20}alkenyl, O $(A)_q$O C_{1-6}alkyl, O $(A)_q$ heterocyclyl, O $(A)_q$ sugar, O $(A)_q$O[C(O)CH(R_{14})NH]$_s$ H, $(A)_n$OH, $(A)_n$OC_{1-20}alkyl, $(A)_n$OC_{1-20}alkenyl, $(A)_n$OC(O)C_{1-20}alkyl, $(A)_n$OC(O)C_{1-20}alkenyl, $(A)_n$OC(O)aryl, $(A)_n$O[C(O)CH(R_{14})NH]$_s$ H, $(A)_n$O[sugar]$_s$, $(A)_n$NHC_{1-20}alkyl, $(A)_n$N(C_{1-20}alkyl)$_2$, $(A)_n$NHC_{1-20}alkenyl, $(A)_n$N(C_{1-20}alkenyl)$_2$, $(A)_n$NHC(O)C_{1-20}alkyl, $(A)_n$NHC(O)C_{1-20}alkenyl, $(A)_n$NHC(O)aryl, $(A)_n$NH[C(O)CH(R_{14})NH]$_s$ H, $(A)_n$NH [sugar]$_s$, $(A)_n$$SO_3$H, $(A)_n$$SO_3$$C_{1-20}$alkyl, $(A)_n$$SO_3$$C_{1-20}$alkenyl, $(A)_n$C(O)C_{1-20}alkyl, $(A)_n$C(O)C_{1-20}alkenyl, $(A)_n$$CO_2$H, $(A)_n$$CO_2$$C_{1-20}$alkyl, $(A)_n$$CO_2$$C_{1-20}$alkenyl, $(A)_n$C(O)NHC_{1-20}alkyl, $(A)_n$C(O)N(C_{1-20}alkyl)$_2$, $(A)_n$C(O)NHC_{1-20}alkenyl, $(A)_n$C(O)N(C_{1-20}alkenyl)$_2$, $(A)_n$C(O)[NHCH(R_{14})C(O)]$_s$ OH, $(A)_n$C(O)[sugar]$_s$; wherein A is methylene optionally substituted one or two times with a group that is independently selected from C_{1-6}alkyl, C_{2-6}alkenyl, C_{2-6}alkynyl, halogen, OH, OC_{1-6}alkyl, CO_2H, $CO_2$$C_{1-3}$alkyl, NH_2, NHC_{1-3}alkyl, N(C_{1-3}alkyl)$_2$, CN, NO_2, aryl or heterocyclyl; R_{14} is the characterising group of an amino acid, n is 0 or an integer from 1 to 20 and s is an integer from 1 to 5;~~

~~R_2 is hydrogen, C_{1-3}alkyl, OH, SH, NH_2, NO_2, CF_3, halo or CN;~~

~~R_3 is hydrogen, C_1-C_3alkyl, $(CH_2)_m$$NH_2$, $(CH_2)_m$ OH, $(CH_2)_m$ CF_3, $(CH_2)_m$ SH or a 5 or 6 membered heterocyclic group, wherein m is 0 or an integer from 1 to 3;~~

~~R_4 is hydrogen, C_{1-3}alkyl, OH, SH, NH_2, NO_2, CF_3, halo or~~ CN;

~~A is unsubstituted methylene or mono-substituted methylene~~.

4. (Currently Amended) A compound according to <u>any one of claims 1 to 3</u> ~~claim 2~~ wherein

~~X is O, S, NH;~~

~~Y is O, S or N(R_5);~~

~~Z forms a covalent bond between adjacent methylene groups;~~

~~R_1 is C_1-C_{20}alkyl, C_2-C_{20}alkenyl, C_2-C_{20}alkynyl, $(A)_nC(O)R_6$, $(A)_nC(S)R_6$, $(A)_nS(O)R_6$, $(A)_nS(O)_2R_6$, $(A)_nOR_7$, $(A)_nSR_7$, $(A)_nN(R_8)_2$, $(A)_nC(=NR_9)R_{10}$ or $(A)_nR_{11}$ where n, R_6, R_7, R_8, R_9, R_{10} and R_{11} are defined above;~~

~~R_2 is hydrogen, methyl, OH, OCH_3, SH, NH_2, NO_2, CF_3, halo or CN;~~

R_3 is C_{1-3}alkyl or $OC(R_{17})_3$; ~~$(CH_2)_mNH_2$, $(CH_2)_m$OH, $(CH_2)_m$SH or heterocyclyl where m is defined above~~;

~~R_4 is hydrogen, methyl, OH, OCH_3, SH, NH_2, NO_2, CF_3, CF_3, halo or CN~~.

5. (Currently Amended) A compound according to ~~claim 2~~ claim 1 wherein the compound is 4-(4-Methoxyphenyl)-1-(3-methylbutyl)-1*H*-pyrazole

~~X is O or NH;~~

~~Y is O or $N(R_{18})$ where R_{18} is selected from hydrogen, C_{1-20}alkyl, C_{1-20}alkenyl, C_{1-20}alkenyl, C_{1-20}alkynyl and $(CH_2)_nR_{11}$ where R_{11} and n are defined above;~~

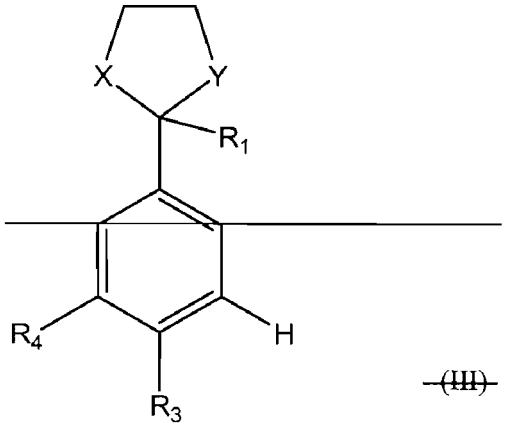
~~Z forms a covalent bond between adjacent methylene groups;~~

~~R_2 is hydrogen, halomethyl, OH, OCH_3, SH, NH_2, NO_2 or CN;~~

~~R_3 is hydrogen, C_{1-3}alkyl, $(CH_2)_mNH_2$, $(CH_2)_m$OH or $(CH_2)_mCF_3$ or heterocyclyl where m is defined above;~~

~~R_4 is hydrogen, methyl, OH, OCH_3, SH, NH_2, NO_2 or CN~~.

6. (Currently Amended) A compound according to claim 1 wherein the compound is 1-(3-Methylbutyl)-4-(4-methylphenyl)-1*H*-pyrazole ~~of formula (III)~~



~~(III)~~

~~wherein~~

~~X is O or NH ;~~

~~Y is O or N(R_{18}) where R_{18} is defined above;~~

~~R_3 is hydrogen, NH_2, OH;~~

~~R_4 is hydrogen, methyl, OCH_3, or OH~~.

7-39. (Cancelled)

40. (Previously Presented) A pharmaceutical composition comprising a compound according to claim 1 and a pharmaceutically acceptable carrier, diluent or excipient.

41. (Original) A pharmaceutical composition according to claim 40 further comprising a glucocorticoid.

42-46. (Cancelled)